Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1   Claim 1 (original): An apparatus for automating cross calibrations of plant
2 instruments, said apparatus comprising:
3   a processor in communication with a data storage system, said data storage
4 system being a part of a plant monitoring system, said processor programmed to
5 execute a process including
6   loading a data set from said data storage system, said data set including
7   a plurality of measured process values from a plurality of instruments, said
8   plurality of instruments including at least one redundant instrument, said
9   plurality of measured process values including a plurality of temperature
10   measurements obtained during isothermal conditions,
11   selecting for analysis a set of data from said data set,
12   removing a set of deviating data from said set of data,
13   analyzing a set of remaining data for cross-calibration, and
14   recalibrating any one of said plurality of instruments that produce at
15   least one data point in said set of deviating data.

1   Claim 2 (original): The apparatus of Claim 1 wherein said process step of
2 loading a data set includes selecting a file, loading a set of RTD data, calculating RTD
3 averages from said set of RTD data, loading a set of thermocouple data, calculating
4 thermocouple averages from said set of thermocouple data, and matching timeslices.

1   Claim 3 (original): The apparatus of Claim 1 wherein said process step of
2 selecting for analysis includes selecting said set of data consisting of a plurality of data
3 points that fall within a specified range and calculating an upper temperature and a
4 lower temperature for at least one region.

1   Claim 4 (original): The apparatus of Claim 1 wherein said process step of
2 removing said set of deviating data includes calculating an average narrow range

3   standard deviation value, calculating a fluctuation standard deviation value of average

4   narrow range fluctuations, rejecting a timeslice for said fluctuation standard deviation

5   outside a specified range, and matching thermocouple times to RTD times.

1   Claim 5 (original): The apparatus of Claim 1 wherein said set of data includes a

2   set of RTD data and a set of thermocouple data, said process step of analyzing said set

3   of remaining data includes calculating a set of RTD deviations from said set of RTD

4   data, calculating an average value and a standard deviation value from said set of RTD

5   deviations, calculating a set of thermocouple deviations from said set of thermocouple

6   data, and calculating an average of said set of thermocouple deviations.

1   Claim 6 (original): The apparatus of Claim 1 wherein said process step of

2   recalibrating a deviating instrument includes calculating new coefficients for said

3   deviating instrument.

1   Claim 7 (original): The apparatus of Claim 1 wherein said process step of

2   recalibrating a deviating instrument includes calculating a recalibration uncertainty

3   value for said deviating instrument.

1   Claim 8 (original): The apparatus of Claim 1 wherein said process step of

2   recalibrating a deviating instrument 414includes calculating resistance versus

3   temperature for said deviating instrument, calculating new coefficients for said

4   deviating instrument, producing a recalibration curve, and calculating a recalibration

5   uncertainty value.

1   Claim 9 (original): The apparatus of Claim 1 wherein said process executed by

2   said processor further includes providing a user interface for interacting with an

3   operator of said processor.

1   Claim 10 (withdrawn): An apparatus for automating cross calibrations of plant

2   instruments, said apparatus comprising:

3   a processor in communication with a data storage system, said data storage

4   system being a part of a plant computer system, said processor programmed to

5   execute a process including:

6   loading a data set from said data storage system, said data set including

7   a plurality of measured process values from a plurality of instruments,

8   selecting for analysis a set of data from said data set,

9   removing a set of deviating data from said set of data,

10   analyzing a set of remaining data for cross-calibration of said plurality of

11 instruments, and

12   recalibrating any one of said plurality of instruments that produce at

13 least one data point in said set of deviating data, said process step of

14 recalibrating including calculating new coefficients for said deviating

15 instrument and calculating a recalibration uncertainty value for said deviating

16 instrument.

1 Claim 11 (currently amended and withdrawn): An apparatus for automating

2 cross calibrations of plant instruments, said apparatus comprising:

3 a processor in communication with a data storage system, said data storage

4 system being a part of a plant computer system, said processor programmed to

5 execute a process including:

6   loading a data set from said data storage system, said data set including

7 a plurality of measured process values from a plurality of instruments, said

8 plurality of instruments including at least one redundant instrument, said

9 plurality of measured process values obtained during equilibrium conditions,

10   selecting for analysis a set of data from said data set,

11   removing a set of deviating data from said set of data,

12   analyzing a set of remaining data for cross-calibration of said plurality of

13 instruments, and

14   <u>recalibrating any one of said plurality of instruments that produce at</u>

15 <u>least one data point in said set of deviating data, said process step of</u>

16 <u>recalibrating including calculating new coefficients for said deviating</u>

17 <u>instrument and calculating a recalibration uncertainty value for said deviating</u>

18 <u>instrument.</u>

1 Claim 12 (withdrawn): An apparatus for automating cross calibrations of plant

2 instruments, said apparatus comprising:

3 a processor in communication with a data storage system, said data storage

4 system being a part of a plant computer system, said processor programmed to

5 execute a process including:

6   loading a data set from said data storage system, said data set including
7   a plurality of measured process values from a plurality of instruments,
8   selecting for analysis a set of data from said data set, said set of data
9   consisting of a plurality of data points that fall within a specified range,
10   analyzing a set of remaining data for cross-calibration of said plurality of
11   instruments, and
12   recalibrating any one of said plurality of instruments that produce at
13   least one data point in said set of deviating data, said process step of
14   recalibrating including calculating new coefficients for said deviating
15   instrument and calculating a recalibration uncertainty value for said deviating
16   instrument.

1   Claim 13 (withdrawn): An apparatus for automating cross calibrations of plant
2 instruments, said apparatus comprising:
3   a processor in communication with a data storage system, said data storage
4 system being a part of a plant computer system, said processor programmed to
5 execute a process including:
6   loading a data set from said data storage system, said data set including
7   a plurality of measured process values from a plurality of instruments,
8   selecting for analysis a set of data from said data set, said set of data
9   including a set of RTD data and a set of thermocouple data,
10   removing a set of deviating data from said set of data, and
11   analyzing a set of remaining data for cross-calibration of said plurality of
12   instruments, said process step of analyzing further including calculating a set
13   of RTD deviations from said set of RTD data, calculating an average value and a
14   standard deviation value from said set of RTD deviations, calculating a set of
15   thermocouple deviations from said set of thermocouple data, and calculating an
16   average of said set of thermocouple deviations.

1   Claim 14 (original): An apparatus for automating cross calibrations of plant
2 instruments, said apparatus comprising:
3   a processor in communication with a data storage system, said data storage
4 system being a part of a plant computer system, said processor programmed to
5 execute a process including:

6   loading a data set from said data storage system, said data set including

7   a plurality of measured process values from a plurality of instruments,

8   selecting for analysis a set of data from said data set,

9   removing a set of deviating data from said set of data, and

10   analyzing a set of remaining data for cross-calibration of said plurality of

11   instruments.

1   Claim 15 (original): The apparatus of Claim 14 wherein said process step of

2   loading a data set includes selecting a file, loading a set of RTD data, calculating RTD

3   averages from said set of RTD data, loading a set of thermocouple data, calculating

4   thermocouple averages from said set of thermocouple data, and matching timeslices.

1   Claim 16 (original): The apparatus of Claim 14 wherein said process step of

2   loading a data set includes calculating at least one average from said data set.

1   Claim 17 (original): The apparatus of Claim 14 wherein said process step of

2   loading a data set includes removing any outliers from said data set before calculating

3   at least one average from said data set.

1   Claim 18 (original): The apparatus of Claim 14 wherein said process step of

2   selecting for analysis includes selecting said set of data consisting of a plurality of data

3   points that fall within a specified range.

1   Claim 19 (original): The apparatus of Claim 14 wherein said process step of

2   selecting for analysis includes calculating an upper temperature and a lower

3   temperature for at least one region.

1   Claim 20 (original): The apparatus of Claim 14 wherein said process step of

2   selecting for analysis includes calculating an upper temperature and a lower

3   temperature for at least one region and separating said set of data into an associated

4   said at least one region.

1   Claim 21 (original): The apparatus of Claim 14 wherein said process step of

2   selecting for analysis includes selecting said set of data consisting of a plurality of data

3   points that fall within a specified range and calculating an upper temperature and a

4   lower temperature for at least one region.

1   Claim 22 (original): The apparatus of Claim 14 wherein said process step of

2   removing said set of deviating data includes calculating an average narrow range

3   standard deviation value, calculating a fluctuation standard deviation value of average

4   narrow range fluctuations, rejecting a timeslice for said fluctuation standard deviation

5   outside a specified range, and matching thermocouple times to RTD times.

1   Claim 23 (original): The apparatus of Claim 14 wherein said process step of

2   analyzing said set of remaining data includes building at least one table of correction

3   deviations.

1   Claim 24 (original): The apparatus of Claim 23 wherein said process step of

2   analyzing said set of remaining data 408further includes calculating an average for

3   each of said at least one table of correction deviations.

1   Claim 25 (original): The apparatus of Claim 23 wherein said process step of

2   analyzing said set of remaining data further includes calculating a population

3   standard deviation for each of said at least one table of correction deviations.

1   Claim 26 (original): The apparatus of Claim 14 wherein said set of data

2   includes a set of RTD data and a set of thermocouple data, said process step of

3   analyzing said set of remaining data includes calculating a set of RTD deviations from

4   said set of RTD data, calculating an average value and a standard deviation value from

5   said set of RTD deviations, calculating a set of thermocouple deviations from said set

6   of thermocouple data, and calculating an average of said set of thermocouple

7   deviations.

1   Claim 27 (original): The apparatus of Claim 14 further including, after said

2   process step of analyzing said set of remaining data, a process step of generating a

3   report.

1   Claim 28 (original): The apparatus of Claim 27 wherein said step of generating

2   a report includes a step of calculating a percent of removed data for at least one

3   region.

1   Claim 29 (original): The apparatus of Claim 27 wherein said step of generating

2   a report includes generating an RTD report.

1   Claim 30 (original): The apparatus of Claim 27 wherein said step of generating

2   a report includes generating a thermocouple report.

1   Claim 31 (original): The apparatus of Claim 14 wherein said process executed

2   by said processor further includes, after said step of analyzing, a step of recalibrating

3   any one of said plurality of instruments that produce at least one data point in said

4   set of deviating data.

1   Claim 32 (original): The apparatus of Claim 31 wherein said process step of

2   recalibrating a deviating instrument includes calculating new coefficients for said

3   deviating instrument.

1   Claim 33 (original): The apparatus of Claim 31 wherein said process step of

2   recalibrating a deviating instrument includes calculating new coefficients for said

3   deviating instrument and calculating a recalibration uncertainty value.

1   Claim 34 (original): The apparatus of Claim 31 wherein said process step of

2   recalibrating a deviating instrument includes calculating resistance versus

3   temperature for said deviating instrument, calculating new coefficients for said

4   deviating instrument, calculating a recalibration curve, and calculating a recalibration

5   uncertainty value.

1   Claim 35 (original): The apparatus of Claim 31 wherein said process step of

2   recalibrating a deviating instrument includes calculating a recalibration curve that

3   includes determining a difference between a measured temperature value and a

4   recalibrated temperature value.

1   Claim 36 (original): The apparatus of Claim 31 wherein said process step of

2   recalibrating a deviating instrument includes calculating a recalibration uncertainty

3   value and extrapolating said recalibration uncertainty value to accommodate a limit

4   value.

1   Claim 37 (original): The apparatus of Claim 31 wherein said process step of

2   recalibrating a deviating instrument includes calculating a recalibration uncertainty

3   value and adjusting a limit value to accommodate said recalibration uncertainty value.

1   Claim 38 (original): The apparatus of Claim 14 wherein said process executed

2   by said processor further includes providing a user interface for interacting with an

3   operator of said processor.

1   Claim 39 (original): The apparatus of Claim 38 wherein said step of providing

2   said user interface includes entering a plurality of configuration settings, each of said

3   plurality of configuration settings containing a data value stored by said processor.

1   Claim 40 (original): The apparatus of Claim 38 wherein said step of providing

2   said user interface includes displaying a plurality of configuration settings, each of

3   said plurality of configuration settings containing a data value stored by said

4   processor.

1   Claim 41 (original): The apparatus of Claim 38 wherein said step of providing

2   said user interface includes options for printing and displaying a plurality of

3   information associated with said process step of loading a data set.

1   Claim 42 (original): The apparatus of Claim 38 wherein said step of providing

2   said user interface includes options for selecting a set of user selected data associated

3   with said process step of selecting for analysis.

1   Claim 43 (original): The apparatus of Claim 38 wherein said step of providing

2   said user interface includes options for displaying and printing a plurality of

3   information associated with said process step of removing said set of deviating data.

1   Claim 44 (original): The apparatus of Claim 38 wherein said step of providing

2   said user interface includes options for displaying and printing a plurality of

3   information associated with said process step of analyzing said set of remaining data.

1   Claim 45 (original): The apparatus of Claim 38 wherein said step of providing

2   said user interface includes options for loading a plurality of information associated

3   with a process step of generating a report.

1   Claim 46 (original): The apparatus of Claim 38 wherein said step of providing
2 said user interface includes options for displaying a plurality of information associated
3 with a process step of generating a report.

1   Claim 47 (original): The apparatus of Claim 38 wherein said step of providing
2 said user interface includes options for saving a plurality of information associated
3 with a process step of generating a report.

1   Claim 48 (original): The apparatus of Claim 38 wherein said step of providing
2 said user interface includes options for printing a plurality of information associated
3 with a process step of generating a report.

1   Claim 49 (original): The apparatus of Claim 38 wherein said step of providing
2 said user interface includes options for displaying and printing a plurality of
3 recalibration information associated with said process step of recalibrating a deviating
4 instrument.

1   Claim 50 (original): The apparatus of Claim 38 wherein said step of providing
2 said user interface includes options for saving a plurality of recalibration information
3 associated with said process step of recalibrating a deviating instrument.

1   Claim 51 (original): An apparatus for automating cross calibrations of plant
2 instruments, said apparatus comprising:
3   a processor in communication with a data storage system, said data storage
4 system being a part of a plant computer system, said processor programmed to
5 execute a process including:
6   retrieving a data set from said data storage system, said data set
7   including a plurality of measured process values from a plurality of
8   instruments,
9   determining at least one average value from said data set,
10   determining a set of deviating data from said data set, and
11   determining new coefficients for any one of said plurality of instruments
12   that produce at least one data point in said set of deviating data.

1   Claim 52 (original): The apparatus of Claim 51 further including, after said

2   step of retrieving said data set, a process step of sorting said data set.

1   Claim 53 (original): The apparatus of Claim 51 wherein said plurality of

2   instruments includes at least one redundant instrument

1   Claim 54 (original): The apparatus of Claim 51 wherein said plurality of

2   measured process values includes a plurality of temperature measurements obtained

3   during isothermal conditions.

1   Claim 55 (withdrawn): A computer system for automating cross calibrations of

2   plant instruments, comprising:

3   a memory medium for storing program code and a set of computer data;

4   an input/output unit for communicating with a plant monitoring system, said

5   plant monitoring system acquiring a plurality of measured process values from a

6   plurality of instruments; and

7   a processing unit programmed to execute a process including:

8   loading a data set from said plant monitoring system, said data set

9   including said plurality of measured process values from said plurality of

10   instruments,

11   selecting for analysis a set of data from said data set, and

12   analyzing a set of remaining data for cross-calibration of said plurality of

13   instruments.

1   Claim 56 (withdrawn): The computer system of Claim 55 wherein said process

2   executed by said processing unit further includes, after said step of analyzing, a step

3   of removing a set of deviating data from said set of data.

1   Claim 57 (withdrawn): The computer system of Claim 55 wherein said process

2   executed by said processing unit further includes, after said step of analyzing, a step

3   of removing a set of deviating data from said set of data, said step of removing said set

4   of deviating data includes calculating an average narrow range standard deviation

5   value, calculating a fluctuation standard deviation value of average narrow range

6   fluctuations, rejecting a timeslice for said fluctuation standard deviation outside a

7   specified range, and matching thermocouple times to RTD times.

1   Claim 58 (withdrawn): The computer system of Claim 55 wherein said process
2 executed by said processing unit further includes, after said step of analyzing, a step
3 of recalibrating any one of said plurality of instruments that produce at least one data
4 point in said set of deviating data.

1   Claim 59 (withdrawn): The computer system of Claim 55 wherein said process
2 executed by said processing unit further includes, after said step of analyzing, a step
3 of recalibrating a deviating instrument that includes calculating resistance versus
4 temperature for said deviating instrument, calculating new coefficients for said
5 deviating instrument, calculating a recalibration curve, and calculating a recalibration
6 uncertainty value.

1   Claim 60 (withdrawn): The computer system of Claim 55 wherein said process
2 executed by said processing unit further includes, after said step of analyzing, a step
3 of recalibrating a deviating instrument that includes calculating new coefficients for
4 said deviating instrument.

1   Claim 61 (withdrawn): The computer system of Claim 55 wherein said process
2 executed by said processing unit further includes, after said step of analyzing, a step
3 of recalibrating a deviating instrument that includes calculating a recalibration
4 uncertainty value for said deviating instrument.

1   Claim 62 (withdrawn): The computer system of Claim 55 wherein said process
2 step of loading a data set includes selecting a file, loading a set of RTD data,
3 calculating RTD averages from said set of RTD data, loading a set of thermocouple
4 data, calculating thermocouple averages from said set of thermocouple data, and
5 matching timeslices.

1   Claim 63 (withdrawn): The computer system of Claim 55 wherein said process
2 step of selecting for analysis includes selecting said set of data consisting of a plurality
3 of data points that fall within a specified range and calculating an upper temperature
4 and a lower temperature for at least one region.

1   Claim 64 (withdrawn): The computer system of Claim 55 wherein said set of
2 data includes a set of RTD data and a set of thermocouple data, said process step of

3   analyzing said set of remaining data includes calculating a set of RTD deviations from
4   said set of RTD data, calculating an average value and a standard deviation value from
5   said set of RTD deviations, calculating a set of thermocouple deviations from said set
6   of thermocouple data, and calculating an average of said set of thermocouple
7   deviations.

1   Claim 65 (withdrawn): An apparatus for automating cross calibrations of plant
2   instruments, said apparatus comprising:
3   a means for communicating with a plant monitoring system;
4   a means for processing; and
5   a means for performing a cross calibration of a plurality of plant instruments.

1   Claim 66 (withdrawn): The apparatus of Claim 65 further including a means
2   for recalibrating a deviating instrument.

1   Claim 67 (original): A method in a computer system for automating cross
2   calibrations of plant instruments, the method comprising:
3   (a) providing for loading a data set from a data storage unit, said data storage
4   unit being a part of a plant monitoring system, said data set including a plurality of
5   measured process values from a plurality of instruments;
6   (b) providing for selecting for analysis a set of data from said data set;
7   (c) providing for removing a set of deviating data from said set of data;
8   (d) providing for analyzing a set of remaining data; and
9   (e) providing for recalibrating any one of said plurality of instruments that
10   produce at least one data point in said set of deviating data.

1   Claim 68 (original): The method of Claim 67 wherein said step of providing for
2   loading a data set includes providing for selecting a file, providing for loading a set of
3   RTD data, providing for calculating RTD averages from said set of RTD data, providing
4   for loading a set of thermocouple data, providing for calculating thermocouple
5   averages from said set of thermocouple data, and providing for matching timeslices.

1   Claim 69 (original): The method of Claim 67 wherein said step of providing for
2   selecting for analysis includes providing for selecting said set of data consisting of a

3   plurality of data points that fall within a specified range and calculating an upper

4   temperature and a lower temperature for at least one region.

1   Claim 70 (original): The method of Claim 67 wherein said step of providing for

2   removing said set of deviating data includes providing for calculating an average

3   narrow range standard deviation value, providing for calculating a fluctuation

4   standard deviation value of average narrow range fluctuations, providing for rejecting

5   a timeslice for said fluctuation standard deviation outside a specified range, and

6   providing for matching thermocouple times to RTD times.

1   Claim 71 (original): The method of Claim 67 wherein said set of data includes a

2   set of RTD data and a set of thermocouple data, said step of providing for analyzing

3   said set of remaining data includes providing for calculating a set of RTD deviations

4   from said set of RTD data, providing for calculating an average value and a standard

5   deviation value from said set of RTD deviations, providing for calculating a set of

6   thermocouple deviations from said set of thermocouple data, and providing for

7   calculating an average of said set of thermocouple deviations.

1   Claim 72 (original): The method of Claim 67 wherein said step of providing for

2   recalibrating a deviating instrument includes providing for calculating new coefficients

3   for said deviating instrument.

1   Claim 73 (original): The method of Claim 67 wherein said step of providing for

2   recalibrating a deviating instrument includes providing for calculating a recalibration

3   uncertainty value for said deviating instrument.

1   Claim 74 (original): The method of Claim 67 wherein said step of providing for

2   recalibrating a deviating instrument includes providing for calculating resistance

3   versus temperature for said deviating instrument, providing for calculating new

4   coefficients for said deviating instrument, providing for producing a recalibration

5   curve, and providing for calculating a recalibration uncertainty value.

1   Claim 75 (original): The method of Claim 67 further including a step for

2   providing a user interface for interacting with an operator of said processor.

Claim 76 (original): At least one computer programmed to execute a process for automating cross calibrations of plant instruments, the process comprising:

(a) retrieving a data set from a data storage system, said data storage unit being a part of a plant monitoring system, said data set including a plurality of measured process values from a plurality of instruments, said plurality of instruments including a plurality of RTDs;

(b) selecting for analysis a set of data from said data set;

(c) removing a set of deviating data from said set of data;

(d) analyzing a set of remaining data; and

(e) recalibrating any one of said plurality of instruments that produce at least one data point in said set of deviating data.

Claim 77 (original): The process of Claim 76 wherein said step (a) of loading a data set includes selecting a file, loading a set of RTD data, calculating RTD averages from said set of RTD data, loading a set of thermocouple data, calculating thermocouple averages from said set of thermocouple data, and matching timeslices.

Claim 78 (original): The process of Claim 76 wherein said step (b) of selecting for analysis includes selecting said set of data consisting of a plurality of data points that fall within a specified range and calculating an upper temperature and a lower temperature for at least one region.

Claim 79 (original): The process of Claim 76 wherein said step (c) of removing said set of deviating data includes calculating an average narrow range standard deviation value, calculating a fluctuation standard deviation value of average narrow range fluctuations, rejecting a timeslice for said fluctuation standard deviation outside a specified range, and matching thermocouple times to RTD times.

Claim 80 (original): The process of Claim 76 wherein said set of data includes a set of RTD data and a set of thermocouple data, said step (d) of analyzing said set of remaining data includes calculating a set of RTD deviations from said set of RTD data, calculating an average value and a standard deviation value from said set of RTD deviations, calculating a set of thermocouple deviations from said set of thermocouple data, and calculating an average of said set of thermocouple deviations.

1   Claim 81 (original): The process of Claim 76 wherein said step (e) of

2 recalibrating a deviating instrument includes calculating new coefficients for said

3 deviating instrument.

1   Claim 82 (original): The process of Claim 76 wherein said step (e) of

2 recalibrating a deviating instrument includes calculating a recalibration uncertainty

3 value for said deviating instrument.

1   Claim 83 (original): The process of Claim 76 wherein said step (e) of

2 recalibrating a deviating instrument includes calculating resistance versus

3 temperature for said deviating instrument, calculating new coefficients for said

4 deviating instrument, producing a recalibration curve, and calculating a recalibration

5 uncertainty value.

1   Claim 84 (original): A program storage device readable by a machine, tangibly

2 embodying a program of instructions executable by the machine to perform method

3 steps for automating cross calibrations of plant instruments, said method comprising:

4   (a) retrieving a data set from a data storage system, said data storage unit being

5 a part of a plant monitoring system, said data set including a plurality of measured

6 process values from a plurality of RTD instruments;

7   (b) selecting for analysis a set of data from said data set;

8   (c) removing a set of deviating data from said set of data; and

9   (d) analyzing a set of remaining data.

1   Claim 85 (original): The method of Claim 84 further including:

2   (e) recalibrating a deviating instrument, said a deviating instrument being any

3 one of said plurality of instruments that produce at least one data point in said set of

4 deviating data.

1   Claim 86 (original): The method of Claim 85 wherein said step (e) of

2 recalibrating a deviating instrument includes calculating new coefficients for said

3 deviating instrument.

1   Claim 87 (original): The method of Claim 85 wherein said step (e) of

2   recalibrating a deviating instrument includes calculating a recalibration uncertainty

3   value for said deviating instrument.

1   Claim 88 (original): The method of Claim 85 wherein said step (e) of

2   recalibrating a deviating instrument includes calculating resistance versus

3   temperature for said deviating instrument, calculating new coefficients for said

4   deviating instrument, producing a recalibration curve, and calculating a recalibration

5   uncertainty value.

1   Claim 89 (original): The method of Claim 84 wherein said step (a) of loading a

2   data set includes selecting a file, loading a set of RTD data, calculating RTD averages

3   from said set of RTD data, loading a set of thermocouple data, calculating

4   thermocouple averages from said set of thermocouple data, and matching timeslices.

1   Claim 90 (original): The method of Claim 84 wherein said step (b) of selecting

2   for analysis includes selecting said set of data consisting of a plurality of data points

3   that fall within a specified range and calculating an upper temperature and a lower

4   temperature for at least one region.

1   Claim 91 (original): The method of Claim 84 wherein said step (c) of removing

2   said set of deviating data includes calculating an average narrow range standard

3   deviation value, calculating a fluctuation standard deviation value of average narrow

4   range fluctuations, rejecting a timeslice for said fluctuation standard deviation outside

5   a specified range, and matching thermocouple times to RTD times.

1   Claim 92 (original): The method of Claim 84 wherein said set of data includes a

2   set of RTD data and a set of thermocouple data, said step (d) of analyzing said set of

3   remaining data includes calculating a set of RTD deviations from said set of RTD data,

4   calculating an average value and a standard deviation value from said set of RTD

5   deviations, calculating a set of thermocouple deviations from said set of thermocouple

6   data, and calculating an average of said set of thermocouple deviations.

1   Claim 93 (original): Computer readable media tangibly embodying a program of

2 instructions executable by a computer to perform a method of automating cross

3 calibrations of plant instruments, said method comprising:

4   (a) retrieving a data set from a data storage system, said data storage unit being

5 a part of a plant monitoring system, said data set including a plurality of measured

6 process values from a plurality of RTD instruments;

7   (b) selecting for analysis a set of data from said data set;

8   (c) analyzing 408a set of remaining data; and

9   (d) recalibrating any one of said plurality of instruments that produce at least

10 one data point in said set of deviating data.

1   Claim 94 (original): The method of Claim 93 further including, after said step

2 (b) selecting for analysis, a step for removing a set of deviating data from said set of

3 data.

1   Claim 95 (original): The method of Claim 94 wherein said step of removing said

2 set of deviating data includes calculating an average narrow range standard deviation

3 value, calculating a fluctuation standard deviation value of average narrow range

4 fluctuations, rejecting a timeslice for said fluctuation standard deviation outside a

5 specified range, and matching thermocouple times to RTD times.

1   Claim 96 (original): The method of Claim 93 wherein said step (a) of loading a

2 data set includes selecting a file, loading a set of RTD data, calculating RTD averages

3 from said set of RTD data, loading a set of thermocouple data, calculating

4 thermocouple averages from said set of thermocouple data, and matching timeslices.

1   Claim 97 (original): The method of Claim 93 wherein said step (b) of selecting

2 for analysis includes selecting said set of data consisting of a plurality of data points

3 that fall within a specified range and calculating an upper temperature and a lower

4 temperature for at least one region.

1   Claim 98 (original): The method of Claim 93 wherein said set of data includes a

2 set of RTD data and a set of thermocouple data, said step (c) of analyzing said set of

3 remaining data includes calculating a set of RTD deviations from said set of RTD data,

4 calculating an average value and a standard deviation value from said set of RTD

5   deviations, calculating a set of thermocouple deviations from said set of thermocouple

6   data, and calculating an average of said set of thermocouple deviations.

1   Claim 99 (original): The method of Claim 93 wherein said step (d) of

2   recalibrating a deviating instrument includes calculating new coefficients for said

3   deviating instrument.

1   Claim 100 (original): The method of Claim 93 wherein said step (d) of

2   recalibrating a deviating instrument includes calculating a recalibration uncertainty

3   value for said deviating instrument.

1   Claim 101 (original): The method of Claim 93 wherein said step (d) of

2   recalibrating a deviating instrument includes calculating resistance versus

3   temperature for said deviating instrument, calculating new coefficients for said

4   deviating instrument, producing a recalibration curve, and calculating a recalibration

5   uncertainty value.